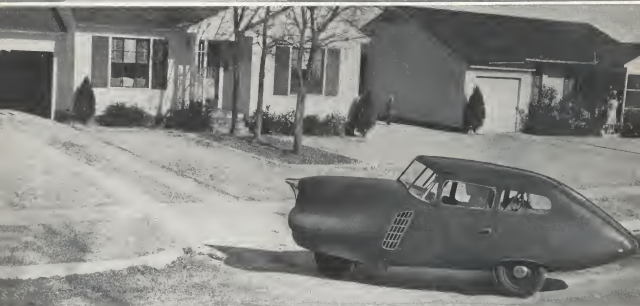


Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

FEBRUARY 4, 1946



Roadable Plane: Two views of the new two-place roadable plane with which Southern Aircraft is experimenting at Garland, Texas, shows the 125 hp. land-air craft in use as a surface motor car, with its flight surfaces detached, and in flight as an airplane. The builder has no plans for quantity production of the plane at this time. (Story on Page 9)

At Least 30 Jet Planes, Engines Under Development

Range from mighty bombers to tiny, supersonic guided missiles.....Page 7

15 Leading Industrialists Form N. Y. Shuttle Service

Have extensive operation mapped; no government assistance will be sought.....Page 35

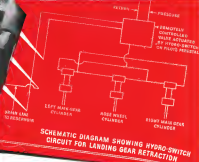
NEW ALL-HYDRAULIC HYDRO-SWITCH

*Provides instant control of remote valves
with less weight... Fewer parts... Lower cost!*

Electro-mechanical devices are entirely eliminated by Air Associates' new Hydro-Switch which provides for positive operation of remote actuating valves through 15' lines... A twist of the knob produces immediate response with direct indication of operating action!

The Hydro-Switch principle of hydraulic control wipes out problems of power source for wirewound or fractional motors, of complex push-pull linkages... permits new applications such as simulating cylinders with integral valves... assures 100% availability with greatest performance for either aircraft or industrial uses. The Hydro-Switch operates at —65° F by manual test... functions with a power-driven pump or a hand pump in the system. Air Associates' Hydro-Switch can simplify any hydraulic installation, improve performance, reduce weight, cut down components required, greatly lower cost! For information, write, wire or phone Air Associates...

AIR ASSOCIATES, INC.
ALL HYDRAULIC HYDRO SWITCH
DIMENSIONS 7" x 2" x 5"
WEIGHT 219 OZ.



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ENGINEERS AND MANUFACTURERS OF AIRCRAFT SPECIALTIES
... SUPPLIERS OF ALL TYPES OF MATERIALS TO THE INDUSTRY SINCE 1917
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THE AVIATION NEWS

Washington Observer



LEND-LEASE SETTLEMENT—Although \$615,000,000 has been added to the \$4,400,000,000 loan to Great Britain to write lend-lease, settlement on aircraft lend-lease to the British still is not complete. There has been some difference of views on the final figure but an agreement is expected soon.

SURPLUS DISPOSAL—The Foreign Liquidation Commission now is working on arrangements to sell all surplus to the country in which such equipment is located. In a recent transfer of all U. S. surplus in the United Kingdom to the British government, the British agreed to assume immediately on request full control responsibility for all U. S. Army and Navy surplus property in the United Kingdom. They agreed, too, to avoid discrimination against, and afford fair and equal contracts in, American companies operating in the United Kingdom in connection with the distribution of any U. S. surplus property bearing the trade name or trade mark of such American firms and at the same time to prevent the re-export to the United States of any Army or Navy surplus included in this transfer.

STRIKE PROBLEMS—Lightplane manufacturers, faced with supply problems arising from the steel strike and other labor difficulties, mostly of a minor nature, fret that they can continue production at prices or slightly higher levels for another month. After that, they would have to shut down in the face of mounting orders. In connection with nation-wide labor trouble there is considerable criticism in Washington of the President's plan for a Florida vacation.

EVERYBODY WANTS A SHOW—The aircraft industry is confused with a serious problem in the fact that show promoters in virtually every large city in the country want to put on aircraft exhibits. The industry is picking to its decision not to participate in shows until ready, and then only on the basis of approved exhibits. Any other course would cost each company a fortune. But the decision to stay out is hard to explain to the numerous good causes which would benefit.

GERMAN SCIENTISTS—Although the Navy has just announced officially that a group of 15 German scientists and experts in aerodynamics "are being brought to Washington" to aid in technical work, it is known that they have been in this country secretly for months, giving full disclosure of their feelings as development of Nazi V-weapons before Germany collapsed.

MUROC LAKE—Navy aviation officers are unhappy because the AAF has succeeded in obtaining what the Navy failed to get—a War Coast laboratory field for the testing and development of jet and gas turbine and pilotless aircraft. The Navy has some fairly elaborate plans for a "Little Wright Field" for training pilotless aircraft—guided missiles and rockets—in the vicinity of the big AAF jet laboratory field at Muroc Lake, Calif. But these plans were vetoed. The "No" apparently came from the White House and was involved in the administration's plan for combining the two services.

ARMY'S FIELD—Throughout the jockeying, AAF has been going forward with developing its Muroc Lake installation which includes the largest landing field in the world, a strip of mile-like hard lake floor covering an area of eight by twelve miles. This solid country with but a few rainy days out of the year is excellent for aeromedical tests, but it has temperatures ranging up to 130 degrees during the day. Present AAF intention is to make Muroc Lake a supplementary experimental field and base to Wright Field. But with jet and gas turbine developments there it could become the field that would wag the Wright Field dog.



Silhouettes of the Douglas BT2D-1 torpedo and dive bomber built for use aboard carriers of the Essex class (Aviation News, Jan. 28).

ROCKET DISPUTE—Air Technical Service Command will not a 12,000-lb. guided missile, possibly next month, in Utah. The announcement that Army Ordnance, in separate experiments in New Mexico, will fire German V-2 rockets points up the fact that the dispute over which branch of the Army will develop this type of weapons has not been settled despite the disclosure of several months ago which allocated approval of authority to AAF and Ordnance.

counterpart of the AAF project, will have quick-start power in its propeller power plant. **Improved Fireball On Way**—The familiar Navy F1R-1 Fireball will emerge shortly in a new, improved form with the new popular combination of prop-and-jet powered in its prototype. The Navy X-29 will be a jet-driven Corsair followed after the F1R. The adoption of the automatic X-29 to jet will not be announced shortly.

To power their coming aerial weapons, the Army and Navy are sponsoring an intensified program of turbo-jet engine research and development. The Army is supervising jet engine projects by the Wright Aeronautical Corp., North and Motor Co., Allison and Chevrolet Divisions of General Motors Corp. and the General Electric Corp. These projects involve gas turbine-propeller units.

Jet Unit Development—In the pure jet field, both Northrop Aircraft, Inc. and Lockheed Aircraft Corp. are advanced on powerful thermal jet units, one of extremely refined design involving 31 parts of major size. The Army is fostering extensive research by Westinghouse Electric Corp., whose new Model 23 will be the firm's most powerful to date. Both jet and propeller units are under development by Westinghouse.

Extensive turbo-supercharger-jet research is being pushed by the AAF and the General Electric Co., pioneer in this field, is producing a master unit that has the in-supercharging engine just the present \$60,000 maximum through the use of its advanced turbo-supercharger jet design. The comparatively minimal bulk altitude clearance of the straight jet embodies the Army's intensive development program of the "compound" engine, a re-compressing engine with turbo-supercharger and exhaust jet unit.

Lowest-Altitude Sea Working—As their prospects may seem, engineers point out that the "all jet" air force is an interim answer between 280 and 1,500 mph, the latter speed now needed the limit for jet propulsion utility.

Newspaper Buys Plane

A war-surplus Corsair has been acquired by the Idaho Statesman newspaper to replace its reporters in areas of news developments where normal channels were disrupted. The paper plans to purchase further planes to carry parties to remote spots in the state.

Analysis of Cross-Country Record Flight

The Lockheed P-40 Shooting Star which was flown from Los Angeles to New York in 4 hrs. 12 min. probably utilized, on an average, only 1,330 lbs. of the 4,200 lbs. of fuel available from the 1-40 jet engine.

Technical men have estimated that it was throttled back to a 15-mph cruise for 100 miles after 100 miles because (1) there were power losses due to fuel consumption, requiring a fuel stop; (2) density of air at 10,000 ft. would be about three-fourths that at sea level, giving the P-40 a thrust equivalent of full power at sea level, and 150 more power at that altitude would have meant drag and large drag increases. The result would have been a small increase in speed, but not a substantially greater power output.

High Tail Wind Assumed—With the help of reference to Black Canyon, where the flight was made, it must be assumed that the flight had an extremely strong tailwind, in the neighborhood of 150 mph. It is not known if the Army explored it. The speed of record (Mach No. 11 at 40,000 ft.) is 692 mph. The world's speed record-holding British Meteor is good for a much number of around 600. Assuming that the P-40 is good for the same, its top speed is 4,000 ft. —with comparatively the landing factor—would be 320 mph. The

difference between that and the 692 mph which Col. Wilkins II. Chittell, the pilot, used by reaching 1,300 mph which was unusual.

Visual Consideration—Clouds and smoke that the average observer for the entire trip must have been around 10 mph and the maximum may have been better than 150 mph.

It should be remembered that cross-country speed record making is a lot different from true speed runs over a measured course with wind speed and direction is particularly as in the jet propulsion field. On cross-country runs, the pilot is to go to whatever altitude is most favorable from a fuel and time and from a relative air density standpoint. A favorable combination of both gives greatest speed for least power and least fuel consumption.

Condition Reiter "On Deck"—For a true speed run over a short course, the pilot is to fly "on the deck" where higher air temperatures prevail than during the point where compressibility is a factor. The speed of sound is dependent on temperature, the warmer it is the faster the airplane can go before it starts backing compressibility shock. At sea level the speed of sound is 760 mph, at "standard" temperature of 59 degrees F. At a 40,000 ft., it is only 600 mph or nearly 180 mph slower.

Findings by the Government Agency—That adequate arrangements for the conduct of such research and development cannot be made without entering into a contract containing such provisions.

Another proposal would provide that patent rights retained by the contractor be subject to the right of any person to which a non-exclusive license on payment of such reasonable royalty rates as may be provided for in the contract.

Further Clarity Sought—Purpose of the proposed amendment is to clarify the bill, actually change the subject section and make it almost as objectionable as the original research measure which prescribed Government ownership of patents arising from Federally-financed research.

Texas Firm Tests Roadable Plane; Will Produce Six-Place Transport

Southern Aircraft Division of Portable Products Corp. has flown both; plans immediate output of executive model, further tests of experimental craft with demountable one-piece wing-tail section.

Two new planes—an experimental two-place roadable model with detachable wing (see cover) and a six-place twin-engine design—executive transport—have been test flown recently by Southern Aircraft Division of Portable Products Corp., Garland, Tex.

The company plans to place the executive transport on the market at a tentative \$40,000 price with deliveries scheduled to begin in April. The experimental roadable plane is being studied further to determine whether the present demand justifies its development for the personal plane market.

Details of Transport—The transport, named the Southernair, will cruise at 140 mph, 200 per cent of full power, has a top speed of 187 mph and a cruising range of 160 miles. It is powered with two six-cylinder horizontally opposed Continental engines of 270 hp. It is designed for luxury accommodations of six persons and 300 lbs. of baggage. Gross weight is 5,000 lbs. and empty weight 3,100 lbs. It is equipped with hydraulically retractable tricycle landing gear, with main wheels retracting into the sides of the fuselage.

Remarks "Widopen"—Although the Southernair is a landplane its general appearance resembles the Grumman Widopen amphibian.

The firm was the largest subcontractor for Grumman during the war, manufacturing wing and tail surfaces for the Avenger, Hellcat and Corsair. It manufactured and delivered more than \$5,000,000 worth of aircraft components during the war.

Roadable Model Is Interesting—Despite the fact that the roadable plane is in experimental stage, the two-place craft is of much interest to the aviation industry.

John Gower, CAA consultant on personal flying, and a number of

other students of the personal aviation pointed, before roadable planes may well be the ultimate answer to the economic problem of maintaining two motor vehicles, one air and one surface, on a one-vehicle budget.

Performance Good—In flight tests the 135-hp. roadable plane attained a top speed of 135 mph with cruising speed of 110 mph and stalling speed of 35 mph. It has a 300-crik range. Wind speed is 30 ft. and gross weight is 1,350 lb.

Tail, wings and tailbooms are demountable in one section, when the vehicle is used on the ground, and the fuselage then becomes a three-wheeled automobile. A model design has been designed to alter the flight components in a larger at the airport while the plane is used as a ground vehicle.

Real Advantage Possible—Possibility is seen that eventually the pilot may buy only the car, for surface use, and rent a set of wings for flight at the airport whenever he wants to take to the air. Advantage of road-country traveling by air means with a personal winged system, is apparent.

The cross-country private flyer could travel on the surface if weather

or grounded him, returning his flight when good weather returned merely by renting a set of wings at the nearest airport.

Easy Takeoff Power Obtained—The three-wheeled undercarriage has given excellent results when the craft is used as an auto, the manufacturer reports.

Added efficiency is obtained in takeoff by driving the auto-airplane down the runway in high gear, it is reported, since propeller efficiency is aided by the drive into the wheels. The same wheel control is used for steering on the ground and in the air, and the steering to the wheels is thrown out as soon as the plane is in the air.

Five Aids Motor Cooling—A mechanical blower has been successfully in cooling the 135-hp. Franklin 6-cylinder engine. First secret test hops were made in December at Mopac Field, Georgetown, Tex. Tests continued for about 10 days after which the roadable craft was returned to the Garland plant for modification.

Art Lardin, Southern Aircraft engineer who has taken over the project since Oren Moe left the company, wants to add power and reduce weight from the present craft, but believes it has excellent potentialities.

No Sales Plan Developed—Willie C. Brown, Southern Aircraft general manager, says that the company is not planning to build or sell the roadable plane in its present form, and that it is anxious to find out whether it has reasonable market appeal before making much additional investment.



"Southernair" The new Southernair, twin-engine six-place executive transport which Southern Aircraft Division of Portable Products Corp., Garland, Tex., expects to sell for approximately \$40,000. It may go into quantity production about April. This prototype is powered with two Ranger engines of 200 hp. each turning fixed-pitch propellers. The production version will use two 270-hp. Continentals with controllable-pitch propellers.

Gen. Doolittle Accepts Presidency of AFA

Stress organization has no commercial aim to grand, will remain in own field.

Presidency of the Air Force Association has been accepted by Lt. Gen. James H. Doolittle who will lead the organization, open to all men and women who have served in the Army Air Forces, will seek to perpetuate the fellowship and traditions of the AAF and assist in obtaining proper recognition of the AAF in the permanent military establishment.

During the proposed activity of the organization he said that three points should be made clear:

1. **It's No Tax To Grind**—This is a non-profit organization. It was created for the benefit of its members and the Air Force they served so loyally. It has no aim to grind of a commercial nature.

2. **No Second**—No attempt will be made to duplicate the legislative and financial bodies which membership in veterans' organizations already. Neither will the Air Force Association cross the lines of the national organizations operating in the public interest on behalf of aviation and air power such as the National Aeronautics Association and the Air Power Center. It will



Air Force Association Officers. Gen. Carl A. Spaatz, AAF commander-in-chief, confers with Lt. Gen. James Doolittle and former Col. James Stewart (left) at last week's conference which brought announcement that Doolittle would head the recently-organized Air Force Association. Stewart, movie actor and former combat flyer, was named to the board of directors.

work through such organizations in matters of national and mutual interest.

3. **Members To Set Policy**—Third Policy will be determined by the voting members of the Association. AAF personnel on active duty are invited to become associate members which will entitle them to all the privileges of regular membership except the right to vote and hold office.

The proposed activity program of the association contemplates the formation of local and regional groups for social and flying opportunities, the promotion of open houses at Air Force exhibitions to members of the association and their families, and approval of ceremonies on such occasions as Air Force Day. It is also planned to publish a monthly magazine.

Spaatz Attends Conference—It was rumored as anticipated that Gen. Carl A. Spaatz, new commander-in-chief of the AAF, attended the reception and press conference at which Doolittle accepted the presidency and that Doolittle's acceptance was characterized by Gen. H. H. Arnold, retiring AAF commander, as a "source of great personal satisfaction to me," as well as a guarantee of its future success.

Travel Cards Sell Good

holders of Air Travel Cards are being notified by the airlines that their present cards, issued originally for 1941 and 1942 and in effect since, will remain valid during 1946.

Flight Schools Hail GI Bill Revisions

Optimism over spurring of flying as result of changes in education program.

Copies of the new regulations covering the educational phases of the revised GI Bill of Rights were being received by regional offices of the Veterans Administration last week amid optimism from flight school operators that they held promise of a tremendous upswing in flying.

Formerly, a veteran was granted 1940 tuition annually for a course of 32 weeks or more. That prohibited much flight instruction, which did not measure that length of time, and also ruled out refresher courses or special instruction such as for an instrument rating.

Major Tutor Shortage Cause—Now, however, a veteran may spend the entire year's allowance on a short course. This will permit flight instruction up to solo and beyond, starting from scratch. The former age limit of 25 also has been removed. Substantial allowances for veterans have been raised.

Percent of the results of the liberalization still await interpretation of VA regional offices. A bulletin of the Aeronautical Training Society reports the interpretation is not final, but points out to appreciate the importance of having their schools approved not alone by CAA,

but by state authorities. Only schools that have state approval can qualify for payments by the Veterans Administration.

Phase Restricted Not Covered—ATS queried the Administration on whether a veteran could rent a plane and have an instructor to coach him on instrument procedure in order to qualify for a CAA instrument rating. VA's answer is that the regulations do not cover plane rental. However, a veteran may take an instrument course for that purpose from an approved school, and the provisions of the bill do apply.

Optimism of operators is that the bill will be satisfactory for former service pilots wishing to take refresher courses, and for those wishing to learn to fly. They are uncertain as to whether it will prove as much benefit to non-flyers who desire to take flight instruction leading to flying jobs. In this case, it is asserted, the several years of 1940 hardly would be sufficient to permit a veteran to complete the necessary course and acquire sufficient time within a year.

Coyote Hunting in Planes Kills Ten in Colorado

Hunting coyotes from an airplane as a sport for amateur or inexperienced flyers according to M. P. Hunsicker, safety supervisor for the CAA in Denver, who said it was to blame for six accidents in his district between Jan. 1 and 30, which cost the lives of 10 men.

Investigation showed most of the pilots had only 60 to 70 hours' experience in the air. Regulations were changed recently so that no special permit is required for hunting from the air.

Pilot Not Necessarily at Fault—Hunsicker and the pilot might not have been to blame in all instances. On the contrary, in the other eight might well have been as he could that he understood with the controls, as even "shot up" the pilot or the plane.

Arnold Backs Proposal For National Air Museum

Gen. H. H. Arnold, commander-in-chief of Army Air Forces, urges immediate enactment of legislation setting up a National Air Museum, either as a division of the Smithsonian Institution or as a separate institution in a letter to Sen. Joseph R. Eastland (D., W. Va.).

Arnold has introduced legisla-



Wright Field Museum. Renewed interest in establishment of a national aeronautical museum recalls the pre-war Army Aeronautical Museum at Wright Field, Dayton, Ohio, a section of which is shown above. Continuing early movements of the Wright brothers, historical planes and exhibits of development in propulsion, engines, wing sections and other activities, the museum attracted thousands of visitors before it was closed at the beginning of World War II to be transformed into an office building.

NACA Still Will Stress Military Research

Although National Advisory Committee for Aeronautics will devote more attention to civilian aviation research than was possible during the war (Aviation News, Jan. 28), only about a third of its activities will be in the civil field.

That was brought out in testimony on the independent office appropriation bill for fiscal 1947 by Jerome C. Hunsicker, NACA chairman, estimated for a House Appropriations subcommittee that the proportion of civilian activities would be "perhaps 35 or 40 percent" of all when the remainder being in the military field.

Favors Basic Research—Explaining that it was difficult to be categorical, Dr. Hunsicker remarked, "On certain aerodynamic research we can't even know whether it applies to a bomber or to the new Constitution. So it will be basic research that we would like to do there, with a certain military application and certain civil application."

"The air transport industry has ambitious plans for world-wide air transportation which must be met, must be truly useful and economical," he asserted, adding that "what can be learned with regard to the propulsion of long-range bombers has its immediate commercial application in the way of transport machines of the immediate future. Jet propulsion and the speeds associated with it have an effect both on military and civil aircraft."

Paraguay Files Ratification

Paraguay's instrument of ratification of the Convention on International Civil Aviation has been deposited with the Department of State as have those of Nicaragua and Turkey.

tion. It was argued that such an arrangement would make the instructors more conscious of their obligations to initial safety practices in their students.

As reported last week in AVIATION NEWS, all members of the committee except Hebesen will serve throughout the year, and Arthur J. Bowman, Den Moore, will continue as chairman, having been re-elected.

Two-Control Ensign Will Be Offered

The all-metal Ensign, 35-hp. two-place personal plane now being test flown on the West Coast, will be offered in a two-control open-cockpit version at a price of \$1,995, when it goes into quantity production this spring, the manufacturer, All-American Aircraft, Inc., Long Beach, Calif. has announced.

Preliminary reports on the plane's first flight give it an outstanding appearance in the light-blue paint scheme as a future competitor of the two-control Ercoupe, already in quantity production, the General Skyliner, and the Aeroeca Chum.

The Ensign currently flying, Model 10A, has conventional three-control arrangement. The two-control model will be designated the 10B.

The Ensign (AVIATION NEWS, Sept. 3, Nov. 3, 1945) is designed to cruise at 112 mph for 366 miles, has a 135-mpg. top speed, and 50-mph landing speed. It is expected to sell for \$2,000. The manufacturer hopes to make an entry in 5,000 planes in the first year of production.

Bargain Hunters Force Delay At Surplus AT-6 Sale

American bargain hunters who flocked to Chgo-Area Field, Ontario, Ill., Jan. 17, to see a sale of 240 St. American AT-6 trainers at \$1,995 each, lasted longer than \$4,023, forced a one-day postponement after the sale had started.

Supporting North American and Northrop representatives, who were with the line of the line, started opening of the gate at 8 a. m., would quickly buy up the choice selections, a group of individual buyers maneuvered the company away out of line. Protesters over the new order of the line America officials to call a halt and postpone the sale one day.

132 Sold in Two Days — North



"Ensign" in flight: First flight picture of the \$2,000 Ensign, all-metal, two-place personal plane produced by All-American Aircraft, Inc., shows roomy cockpit and unusually good visibility.

American buyers intended purchasing 25 of the planes and Northrop was seeking 8 or 10 for its recently announced aeronautical school. Of the 33 planes sold before the sale was postponed, five went to North American and four to Northrop. More than 100 were sold the first day after the false start.

Six Lose Certificates For CAR Violations

Six pilots had their aircraft certificates revoked and six others had their certificates suspended for varying periods as a result of latest investigations conducted by the CAB.

Brands of the investigations, and Board action, follows:

REVOCATIONS:

Paul E. Hayes, pilot, 3016, for operating a passenger plane in violation of Section 20 and 200 of the Federal Aviation Regulations, and making a stop over Lake Michigan on a route west of New York City, and performing aerobatics, including low altitude turns, over a corporate area July 25, 1945. Airplane violated CAR sections 13.56, 40.56 and 40.76.

Charles G. Cheng, major, pilot, for flying into a wall when his certificate had not been appropriately endorsed by a flight instructor, and for performing aerobatics of the same kind, destroyed by the flight instructor when he had not passed a written examination on parts

43 and 44 of the Civil Air Regulations and giving an aircraft when his certificate had not been endorsed for that particular type class and model plane July 1, 1945, at the vicinity of Sandy Point Lodge, Wichita, Kan. Airplane violated CAR sections 41.50, 42.51, 42.52 and 42.53.

George C. Eitz, student pilot, for giving a passenger and pilot at least 100 ft. below 100 ft. Sept. 21, 1945. Airplane violated CAR sections 41.50 and 42.53.

The following student pilot lost their certificate for violating CAR section 42.53: Albert Richard Harris, Sept. 10, 1945, near Ohio, near 700.

Harry Vincent Meyer, Aug. 5, 1945, near Columbia, Mo.

Joseph Vernon Spencer, July 10, 1945, near Houston, Texas. Major.

SUSPENSIONS:

William Clayton Adams, private pilot, for flying with a passenger under Louisville, Ky., over the Cincinnati area, and making a stop over by descending to an altitude of 200 ft. or less and flying at 100 mph for at least seven miles down the river, during several years, Aug. 22, 1945.

Arthur E. Haskins, private pilot, for flying at 100 mph, 40.56, 40.56 and 40.76.

John McFarland, commercial pilot, for leaving the engine of a passenger airplane without a competent operator attending the engine controls. His passenger was a pilot who was in the plane with him when the engine was started by an accident, and John McFarland, was not paying attention to the direction the engine was turning. The three student who were and were grounded. McFarland was out, leaving the passenger in the plane, when the engine was running and speed advance to push the aircraft out into the water again. She was jumping a pilot who then a type and class of which she

5 Reasons why operators can train better pilots and make good profits with the new Swift

Globe Aircraft Corporation
Fort Worth, Texas

To progressive flight school operators:

Many of you have already recognized the advantages and profit possibilities of the new Swift as a training airplane and have asked if a training model Swift is available.

The answer is "Yes."

The Swift has all the qualities of a good plane, profitable trainer, plus many special advantages that no training airplane has ever before offered for the training of private pilots.

The Swifts are being constructed with help you train pilots better and more profitably.

John Kennedy, President
Globe Aircraft Corporation



Students prefer to train in the Swift. Train your students in the airplane they will want to own and fly. General training in the airplane built here has a lot of training from London to San Diego. Swift trained pilots are ready to fly for sale, profitable, enjoyable personal flying.

Proven, All-Metal Construction. The Swift is the original personal airplane of semi-monocoque, all-metal type construction with all metal skin and structural members. Built to stand up for years at the most taxing training pilots can give it. Built with a safety factor of 1.5. Designed for speed, easy handling, carrying and quick. Two maintenance men and depreciation on Swifts are reductions.

Superior Landing Gear. The Swift's special, shock-free, shock-absorbent landing gear is built to take punishment — with a safety factor of 1.5. Operates in bumps and potholes, with auxiliary

steering in case of wingover. By 4:00 a. m. and, steady climb that will show extraordinary general stability.

Stability, Ease of Control. The Swift is naturally stable and balanced on every air. Moderate wing loading (10.5 lbs. per sq. ft.) for positive controllability. Plenty of power and stability for full normal or turbulent air. Easy to demonstrate stability and such stability to students.

Low Landing Speed. Land with flaps at 42 MPH. Protection of flaps does not change the balance of the airplane. Usually good slow landing characteristics.

KEEP OUT AREA OF COMPETITION. Who today has defeated or equaled on America's Swift trainer. Place your orders for Swift trainers with just Swift Dealer NOW!

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The New Continental GR-9A

9-cylinder Radial Engine
for Feeder-line and
Executive Type Aircraft



These Continental Refinements Mean Greater Power, Economy and Dependability, as well as longer life!

- Increased cooling fin area on cylinder heads and barrels.
- Enlarged supercharger impeller and redesigned supercharger entrance and diffuser passages.
- Complete force-feed lubrication to valve gear.
- Propeller reduction gear (on GR-9A model).
- Crankshaft has been re-designed and is ribbed.
- New pressure-type (pistol) carburetor.
- New "flex grid" crankpin bearings.
- Improved generator drive.
- Flexible engine mounting pad.
- Enlarged oil passages to crankshaft.
- Oil pump completely re-designed for greater capacity.
- All main castings re-designed for higher loading.

SKYPOWER FOR THE AGE OF AIR

More than 44 years of specialized experience, enriched by intensive research throughout the war, reaches its maturity today in the new GR-9A Aircraft Engine which Continental Motors has recently introduced.

The GR-9A, and its general counterpart, the GR-8A, are basically identical with the famous Continental-built radial aircraft type engines which powered some 54,000 military tanks and helped land democracy in World War II. As an efficient low-altitude engine, they are special-purpose engines, developed primarily for the planes for feeder line and executive use, now coming off assembly lines in major aircraft plants. In these new specialized numerous refinements, serving the fields not only of design and materials, but of production technique. These refinements, proven by millions of hours of operation in aircraft and tanks, result in greater power—325 hp. in the GR-9A and 400 hp. in the GR-8A—added in increased reliability and economy as well.

In broader applications, where such special performance characteristics as short take-off and low climb are paramount, and where these airplanes must be loaded without compromise on the score of dependability, these new Continental Aircraft Engines are the answer in a great and growing field. A brochure describing the Continental GR-8A and GR-9A is in preparation and will be mailed on request.

Continental Motors Corporation

DETROIT AND MUSKOGEE, MICHIGAN

Unique Wyoming Aircraft Plant Builds Planes for Mountain Work

Call Aircraft Co., Afyon, Wyo., has 10-man working force producing for special market based on requirements of high-altitude flying over rough Western terrain.

One of the most unique aircraft manufacturing organizations in the nation, the Call Aircraft Co. at Afyon, Wyo. is among its post-war personal plane for a special market to fit the needs of the flyers in the rough mountain country of the West and Northwest.

With the present 10-man working force many of them harkens and cousins of President Roosevelt, the company is set to produce one plane a month, but can step up production to one plane a week, if the demand requires it. On the one-a-month basis, the company already has orders for the next two years production.

New Model—The Callier Model A-2 now being built, is the production version of the Model A, (Aviation News, March 15, 1945). The prototype was finished and flown in 1941 after five years of work, received a CAA approved type certificate in 1942. Since then the company has built four other planes of the same design, all of them purchased by mountain flyers in the area.

Wartime material shortages caused suspension of the plane-manufacturing program, but the company kept alive during the war by rebuilding planes damaged in war training programs and also developed a motor sled, the Call Arrow, which operates on runners or wheels, has a body much like a

plane cabin and is powered by an airplane motor and propeller.

Benefits Flared—Afyon is 55 miles from the nearest railroad, so the company trucks in its materials and supplies, and flies out the finished planes.

Only one of the Call-built planes ever has suffered serious damage. It was caught in a windstorm with gusts up to 40 mph near Billings, Mont., landed safely, but was rolled over by the wind. Occupants were unharmed, and when the plane was rebuilt at the factory, it was found to be undamaged structurally, with no warping of frame or fuselage. The prototype was flown about 1,000 hours all over the Northwest before it was retired because of obsolescence, a few months ago.

Special Features—Landed—Call Call owned 11 planes in the last 20 years, as a private flyer, before deciding to build his own to get the type of plane he wanted for mountain flying. Among special design features are: its one-level angle of climb of 5.56 to one, its sea-level takeoff with full load in 435 ft. and takeoff in 881 ft. at 6,800 ft. altitude (the altitude at Afyon), service ceiling of 17,000 ft., a rate of climb of 616 ft. per min. at 6,048 ft., 60-mph landing speed. Design features include wide landing gear (56 in.) with landing gear designed for use with skis in winter flying; levelled level of control surfaces to

make the plane spin-resistant (it will stop spinning in one and a half turns despite effort to hold it on the stick); good forward visibility by use of a wrapback one-piece plastic windshield; and a sloping cowling. Wings are braced with two sturdy struts.

Two Engines Offered—The powerplant may be either a 100- or a 125-hp. Lycoming engine, depending on whether the plane is used as a two-place or three-place craft. At 75 percent power at sea level, using the 125-hp engine, the plane will cruise at 109 mph, has a top speed of 120 mph and cruising range of 254 miles.

The fuselage is made of steel tubing, and the wing of spruce ribs and spars, all fabric covered.

Surplus Metal Hangers Not Available As Yet

Aircraft operators who have been hoping to buy surplus military post-war surplus airplane hangers, had their hopes dashed by a War Assets Corp. announcement that it did not expect to have any such all-metal hangers on sale in the near future.

Recently two hangers, one small and one medium-sized were declared surplus in Boston by the Navy and sold promptly. An Army survey, conducted for WAC, indicated that the only portable hanger now in surplus is a canvas temporary shelter.

These hangers are designated as the "bakery" type, and made of steel upright trusswork, with the canvas suspended by cables. They are better sold from the St. Louis Regional WAC office. Of 15 which have been declared surplus, several already have been sold.



Airplane and Snowplane Call Aircraft Co., Afyon, Wyo., now is building this Model A-2, development of its first plane, which has been flying since 1941. The



plane is designed for flying in high-altitude mountain areas. The first is superseding the plane produced with the Arrow (right) which is built on aircraft lines



SERVICE TEST SEABEE

Two photos of the remodeled Republic Seabee powered with a 212-hp Franklin air-cooled engine, show interesting points of difference between this and the original all-weather plane. Republic officials emphasize, however, that this plane is one of a service test quantity of five planes, in which improvements and are being made, and that when the production Seabee appears in April (trial strike permitting) it may have some additional differences. Major points of change thus far include—better streamlining on outboard floats and their supporting struts, elimination of landing gear wheel wells, under rear seat is cabot, addition of wing struts for redesigned straight wing which also fence off passengers from propeller, redesigned covering for larger engine which replaces 175-hp powerplant in prototype "conversion" on wing and tail surfaces for additional structural strength, making possible simplified external structure. With Franklin EAL 208 engine, company figures following performance: Top speed 220 mph, cruising speed 102 mph, and range at 550 mi.



Selective Register Of Airports Planned

Accord look would give all data on bases approved by organization's inquiries.

Plans to operate a travel service for the private flyer which will include inspection of airports and airports have been announced by John W. La Rocque, president of a new organization, Registered Travel Service, 210 E. 42nd St., New York.

The organization proposes to compile the following information through survey and periodic checks at each of the air bases included—
 ▶ Map of owner and operator.
 ▶ Landing and navigation facilities.
 ▶ Base services, facilities and fees.
 ▶ Available transportation, bus, taxi, train.
 ▶ Restaurants at field or in vicinity.

▶ Hotels or other overnight accommodations and rates.
 ▶ Sports—golf, tennis, swimming, hunting, fishing, etc. available in the airport vicinity.
 ▶ Historical or scenic data about the vicinity which might influence the pilot in planning a trip.

The information is to be published annually in an airport register, which it is planned to circulate to every new lightplane purchaser. It is expected that the circulation will be made possible through the "leading personal plane manufacturer, and oil selling companies," La Rocque said.

▶ Most Meet Standards—Only airports which come up to certain minimum standards of proper service and facilities will be listed in the register. These will be checked periodically to see that they continue to meet the standards. La Rocque believes that this will have the effect

of keeping the good airports good, and encouraging the sub-standard fields to raise their standards to be in the register.

A national system of inspectors has been established which will handle the checking of fields, and will also seek to promote private service in the various communities. ▶ Director Is Flyer—La Rocque, a New York attorney, specializing in aviation law, was general manager of Better Packages, Inc., Shelton, Conn., wartime manufacturer of aircraft loads and instruments. Director of the organization is Richard Gerold, former Navy lieutenant commander, pilot and maintenance officer, and former private flyer.

The new organization has a cooperative connection with Travel Service Magazine Guide, which will supply hotel information. Both organizations plan to supply special information to flyers on individual requests, in addition to the data in the register.

▶ Seen Greater Selectivity—La Rocque points out that increased cruising range and speed of post-war personal plane designs, makes it possible for the private flyer to be more selective in his stage. That he believes will mean that the air base operated with particular stress on care, courtesy and cleanliness will attract the bulk of the flyers, while the shoddy, down-at-the-heel base will lose its customers as soon as they learn of the superior service.

Taylorcraft Official Tours Northern Europe

A flight through Northern Europe, one of the longest air trips made in a civilian lightplane in that area since the war, has been completed by G. A. Edwards chief test pilot of Taylorcraft, Ltd., who flew from England to Copenhagen, Denmark, in a three-day, 14-hour Taylorcraft Xanter. The round-trip totaled 3,280 miles.

Edwards reported the direct flying cost was less than \$10 (144) and that the only service required was putting some ice in the bins during the warm trip.

▶ Norway Orders Planes—Indicative of the interest in lightplanes to be found in European countries was an order for 46 planes which he received from the Norwegian government.

Time for the return trip was reported as 15 hrs 33 mins.—or a ground speed of slightly more than 100 mph.

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Over \$150,000,000 To Be Spent on Fields

More than \$150,000,000 has been appropriated by or made available to local municipalities throughout the United States for airport development, as a part of the rapid growth in airport planning in local communities since World War II, the airport planning section of CAA reported last week.

The section has received requests for guidance in airport planning from hundreds of communities, many of which have asked for airport engineers to inspect sites, and many of which have developed master plans covering years of development.

► **Cities Listed**—Construction of airports now is underway at Harrison, Ark.; Dubuque, Guthrie Center, and Perry, Iowa; Weymouth, Mass.; Worcester, Minn.; Pellston, Mich.; Beltsville, and Okemah, Okla.; Dayton, Floydham, Graham, Lambeau, Leffing, Moon, and New Boston, Tex.; and Parkersburg, West Va.

Towns and cities reported as having taken action to raise airport funds include: Ft. Smith, Ark.; Pampa, and Red Bluff, Calif.; New Haven, Conn.; Villaville, Conn.; Ft. Randolph and South Bend, Ind.; Des Moines, Dubuque, and Guthrie Center, Iowa; Elwood, Ky.; Worcester, Mass.; Detroit and Pellston, Mich.; Jefferson City, Mo.; La Grange, Mo.; Fayetteville, Ark.; Lexington, and Whitehall, Mo.; Broken Bow, Neb.; Union, N. Y.; Shelby, N. C.; Ashland, Cleveland, Marion, and Steubenville, Ohio; Anadarko, Durbin, Guthrie, Lawler, Mayaguez, New York, and Oklahoma City, Oklahoma; Albany, Ore.; Lebanon, Pa.; Providence, R. I.; Alpine, Benham, Bryan, Canadian, Delta, Denton, Everett, Eastland, Fredericksburg, Mason, Metairie, Murren, Monahan, Plainsville, Saymore, Benton, Stamford and Taylor, Texas; Anacostia, Dayton, Paterson-Brewer, Tacoma and Ticon, Wash.

3 State Organizations Elect New Officers

Delaware, Pennsylvania, and Washington aviation organizations recently elected officers and drafted programs for advancing aviation in their local areas.

Appeal for more representation of airport operators and pilots

among the officers and directors of the Idaho Aviation Association, was voiced at a recent meeting at Boise, with an indication that the pilots and operators might "secede" to form their own organization.

► **Officers Named**—Association officers named were William P. Hughes, Lewiston city engineer, president; Walter York, Boise, vice-president; and directors Owen Hicks, Lewiston, (the only operator named); Mayor R. W. Forslund; Idaho Falls, G. E. Shum, Pocatello; Jake W. Garrett, Twin Falls; Harry L. Yost, and Dr. Harbison H. Greenwood, Coeur d'Alene. A secretary-treasurer will be named later to replace Max Steffen, Boise, resigned.

► **Pennsylvania**—Edwin B. Brufen, Easton, Penna., was named president of the Pennsylvania Aviation Trades Association, at a recent meeting at Harrisburg, where retiring President Martin Gooley, Johnstown, reported a 25 percent increase in membership. Gooley described the association's cooperative insurance program, its work with the CAA on ceiling prices on used aircraft, and cooperation with the State Aeronautics Commission and Director William L. Anderson.

Other new officers are Russell Buck, Somerset, vice-president; K. Russell Smith, Wilkes-Barre, secretary; and Alfred Berkefeld, Reading, treasurer. Directors are Robert Gilbert, Kennerly; George Blum, Lancaster; Kenneth Schaefer, Butler; C. H. Clay, Greencastle; Wayne Boylman, Vandergrift, and the four officers.

► **Washington State**—Meeting in Seattle, the Washington State Aviation Association elected Gilbert B. Cook, Seattle, president; Roy Sugg,

Vancouver, vice-president, and Darryl Willard, Marysville, secretary-treasurer. The association discussed recommendations for inclusion of CAA technicians on private flying, and means to aid safety.

Air Caravan to Advertise Rt. Worth Aviation Show

An air caravan of 25 to 40 private planes from the Ft. Worth area is scheduled to visit leading cities and towns of the southwest on successive week ends to promote the Southwestern Aviation Exposition to be held at Ft. Worth, Mar. 6-11.

R. W. Carroll, president of the Exposition, expects the show will have the most complete exhibit of personal planes ever seen in the southwest. Attendance is expected to be boosted by the fact that the aviation companion to home, held jointly with the 50th Anniversary Southwestern Exposition & Fat Stock Show.

Escondido, Calif., Airport Now Being Enlarged

Facilities at Eagle Airport, operated by John Engel at Escondido, Calif., for private flyers, are being enlarged, under a spring construction program. A temporary repair station, 29 x 50 ft., soon will be augmented by additional repairs shops, one 20 x 118 and the other 60 x 50 ft. The present 28 x 59 airplane hangar will be enlarged to 28 x 150 ft.

An 18 x 28 ft. hangar with 28 ft. clearance is nearing completion, and plans call for construction of a group of T-hangers soon.



SIGNING FOR SHIFTS:

President Harry B. White of Palo Alto, Calif., airport, bids goodbye to Globe Aircraft representatives Russell Miller and Kenneth Cook as they prepare to leave after White closed an order for \$1,106,666 worth of new two-place all-metal Swifts.

[illegible]

Westinghouse 19B Axial Flow Jet Is Advance Over Earlier Model

Model used in McDonnell Navy fighter develops 100 hp. more than 49A, uses 3,400 hp. of its total power output to operate six-stage compressor.

The Westinghouse 180 axial flow jet engine, two of which are used to power the McDonnell XFT-1 Navy fighter, develops 1,400 hp at 450 rpm, and 1,700 hp at 550 rpm, company engineers have revealed. The new model, first American design to use servos, develops 100 hp more than the recently disclosed 18A (AVIATION NEWS, Dec 3), and has numerous refinements.

The new unit utilizes 3,400 hp of its total power to operate the six-stage axial flow air compressor. Oil lubricated bearings are used, cooling taking place in a stream radiator mounted on the forward end of the engine.

Flame Variable-Area Nozzle — A feature of the 13B is a variable-area nozzle, controllable from the cockpit, which regulates the power output and provides quick acceleration in the event of a carrier landing "wave off."

Used Aviation Gasoline—The 1966, developed under auspices of the Bureau of Aeronautics, operates on conventional aviation gasoline, a prompt requirement to minimize fuel handling and storage problems aboard the carrier. It was first operated in June, 1964, its conceptual design having been started the day after Pearl Harbor.

Concomitantly with the release of these details on the 1985, Westinghouse gave further data on the "buzzy" 944B model, a reduced-scale version. This tiny unit, only 9 1/2 inches in diameter, develops 275 lbs static thrust (app 400 hp at 550 mph) at a weight of only 145 lbs. It operates at 24,000 rpm, the highest speed yet man-

► **Naval Oil Systems**—The problem of high speed lubrication was

solved by the design of an "oil mist," which is circulated through the bearings by compressed air. This "baby" test first ran in April, 1944. It is designed as a "boomier" test, instead of primary power supply.

SPA Maps Speed-Up Of Tool Disposal

A speed-up program for disposal of surplus machine tools was outlined last week by the Surplus Property Administration to the first meeting of the Industry Advisory Committee for Metal Working Machinery as it was revealed that more than \$200,000,000 worth of machine tools have been declared surplus, with about \$150,000,000 worth more expected by July 1, 1947.

One of the key points in the stepped-up sales plan will be expanding the dealer-agency system administered by the Reconstruction Finance Corp., under which recognized dealers in machine tools sell as agents for BPC at 12 1/2 percent commission. More than 347 agency agreements had been approved by last week, with 523 applications pending. Goal is 3,000 agents.

†Latest Figures — Latest figures available on machine tool surpluses show that as of Nov. 30, 1965, 1966 originally costing \$304,000,000 were in surplus. Sales to date total \$49,600,000. The breakdown given the Advisory Committee showed that of the tools, 37 percent were lathes, 21 percent boring machines, 18 percent milling machines, and 13 percent grinding machines. In addition, there were gear cutters and finishers, drillers, planers and other types.

As another facet of its toxic waste program, SPA spokesmen told the meeting that it is proposed to establish a regional advisory committee to work with each of the BPC's 31 regional disposal offices.

New British Trainer

Test flights have begun on the prototype of a new British twin-engine, two-place trainer to be produced by Breda & Sigut. Named the Defiant, it is a development of the previous Supercat.

With two 110-hp de Havilland Gyro Major engines, the Defend has a maximum speed of sea level of 160 mph, and a cruising speed of 140 mph. Cruising range is 400 miles. Wingspan is 34 ft, and length, 35 ft.

All-Electric Plane Forecast At AIEE Convention

An all-electric airplane, with propellers driven by electric engines, is possible, Maj. C. K. Chapman, of the AAF, and L. M. Glenside of the Air Technical Service Command, told the recent winter convention of the American Institute of Electrical Engineers, in New York City.

Also put within the realm of possibility by the speakers is the use of television to transmit information to pilots.

► **Forced AC Use**—They foresee the exclusive use of alternating current in aircraft, rather than direct current, now usually installed, because of the increasing use of electrical equipment in aircraft, and the excessive weight of DC installa-

One of the major problems involved in the use of AC in large four-engine aircraft already has been solved, the meeting was told by P P Deach, D E Goss and J C Hutton, of the General Electric Co. It met the difficulty of synchronizing AC generators with engine speeds which vary greatly in flight by the development of a high-speed governor.

Canadian Plant Sold

The Canadian War Assets Corp. has sold the land and buildings at the wartime Central Aircraft Ltd. plant in London, Ont., to a paper box manufacturer, Somerville Ltd. of London, for \$150,000. The land and buildings originally cost \$1 544,488 and were used largely as base from which Mosquito aircraft made at Toronto by de Havilland Aircraft of Canada, were flown direct to Great Britain. Machinery at the plant also was sold, bringing approximately 35 percent of cost.

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Powerplant "Package" Readied for DC-4's

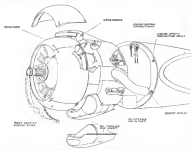
A new "packaged" power unit consisting of a Cyclone 500D engine and a prefabricated nacelle for use on Douglas DC-4 aircraft was announced last week by the Curtiss-Wright Corp. It will permit installation of more powerful engines in DC-4's without necessitating structural changes.

To be installed directly in DC-4's scheduled for delivery to Chicago & Southern Airlines in March, the unit replaces a 1,425-hp powerplant in place of the 1,350-hp engine heretofore used in the aircraft.

Speed Increase Claimed—This is claimed to increase the cruising speed 38 to 45 mph, up to 360 mph, and to allow a payload increase of from 1,300 to 1,600 lbs. The resulting reduction in direct operating costs is equivalent to approximately \$100,000 additional annual profit per airplane, the manufacturer states.

The prefabricated engine nacelle of the unit attaches directly to the present DC-4 wing and firewall. Maintenance problems are simplified by utilization of a three-section oval panel with snap fasteners.

The Rohr Aircraft Corp., of Chula Vista, Calif., is cooperating with C-W in production of the power unit.



"Packaged" Power—Rohr's sketch of the installation of the power unit developed by Curtiss-Wright Corp. for use in the Douglas DC-4. The unit consists of a prefabricated nacelle and a Cyclone 500D 1425-hp engine, claimed to be the most powerful air-cooled engine per pound of weight now in production.

10 Blimps Sold

Ten surplus Navy blimps have been sold by the War Assets Corp. for a total of \$65,000. Goodyear Aircraft Corp. bought seven L-type craft for \$3,000 each, for experimental purposes, and a New York advertising firm purchased three K-type for \$10,000 each. The L's are 147 ft. long, and the K's 200 ft. There are 33 K's and four L's remaining to be sold.

New Material Makes Floor Of 202 Part of Structure

Use of a new material known as "Honeycomb" in the floor of the Martin Model 202 will make the floor a principle structural part of the fuselage. Further use of the bonded metal, plastic, cloth and wood material in the bulkheads of the craft may make for much greater strength and lighter weight, it is claimed.

"Honeycomb" is the result of several years development by Martin and the U. S. Plywood Corp. It is made of paper and cloth bonded to thin sheets of metal such as aluminum or stainless steel, wood and plastic. An adhesive with a tensile strength of 4,500 lb. per square inch is used. The thickness of this

material ranges from one-eighth of an inch and up and size is limited only by size of raw material and process. It is waterproof.

Saves Much Weight—The extremely light weight of the material is an important factor. Savings of as much as half a ton are possible in large transporters by use of the material in floor panels alone and it can be fabricated in curved surfaces as well.

Test Coordinating Unit Is Established By AIA

An aircraft research and testing commission to coordinate basic research and test work of the aircraft manufacturing industry has been established by the Technical Service of the Aircraft Industries Association.

Composed of one representative for each member-company the committee plans a program designed to prevent duplication of effort, expedite vital work and provide consensus in this essential phase of the aircraft industry.

Will Set Standards—One major function of the new commission will be the establishment, monitor or perfection of standards and methods of research and testing, thereby assuring dependability of results and eliminating the necessity for re-examination of data by new users. To implement this program the committee will consist of an eastern and western division in co-ordinate level positions and, in addition, subcommittees to be concerned with specific phases of research and test work.

Joint Board to Study Weapons, Combat Technique

The Joint Operations Review Board has been formed to study current development in modern weapons and to recommend changes in existing combat procedures. The Board is composed of 50 officers of the Army, Navy and Marine Corps specially selected for their World War II experience in joint operations in war theaters. These officers have been given a special six-month orientation course at the Army and Navy Staff College where all meetings will be held. Conclusions and recommendations will be submitted to the Joint Chiefs of Staff.

Vice Admiral Barry W. Hill, commandant of the Army and Navy Staff College will head the Board, and Maj. Gen. Alfred M. Gruenther, deputy commandant, will act here-



The '76 model has a real heat problem

GRANDFATHER skinned with the ketone stove going full blast. The newest, fastest jet propulsion aircraft burns the same familiar fuel—but what a difference in heat! The burning gases of jet propulsion surge upward from 2000° F!

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Solve your toughest problems in engineering and fabricating high temperature alloy products

Dymaxion Dwelling Firm Name Changed

Dymaxion Dwelling Mechanix, Inc., which has contracted to build a new-type metal and plastic house at Beach Aircraft Corp., Wichita, Kan., has changed its name to Fuller House, Inc. and has reorganized.

The Fuller corporation, named after the designer of the Dymaxion house, R. Buckminster Fuller, has developed for manufacture a dwelling unit based on the principles of aerodynamic technology and using aviation industry materials, skills, tools and facilities in production.

175¢/48 Shares Authorized—Under the new capitalization program, 155,840 shares of common stock at \$1 per value per share are authorized instead of the previous 15,500 shares of common at \$10. Present stockholders will receive 18 shares a new stock for each share they hold of old.

An unusual feature of the company's labor relations policy is that representatives of both CIO and AFL unions are members of the board of directors. They are Henry W. Brown, president of the International Association of Machinists, AFL, and Jerni Dickerstein, international representative of United Steelworkers of America, CIO. Herman Wolf is president of the company and Fuller is chairman of the board.



CANADIAN DE HAVILLAND PLANT:

The new-built plant of de Havilland Aircraft of Canada, Ltd., at Toronto, where Mosquito aircraft were produced, now is used for production of the Fox Moth for export to Great Britain. A military aircraft still as the secret test, also will be produced here. Part of the plant will be utilized by Percival Aircraft for its Proctor, and jet-engine transport (Aviation News, Jan. 7).

Radial, Axial Flow Jets Compared

Speaking at a recent meeting of the Washington Section, Institute of Aeronautical Sciences, R. P. Kroger, manager of the Aviation Gas Turbine Division, Westinghouse Corp., presented comparative data on the radial and axial flow types of aviation gas turbines used in jet engines.

The radial flow type, represented by the British Whittle-type in England and the General Electric design in this country, reveals distinct advantages in lower manufacturing costs, simplified design problems and lower specific weight, he said. The axial flow type, sponsored by Westinghouse in this country and used exclusively by the Germans, has considerably smaller diameter, higher compression efficiency and makes possible

continuous utilization of ram pressure.

The two types of engines are about equal in the problem of fuel consumption.

Efficiency Rated—The overall efficiency of the two types is in favor of the radial flow in small power sizes and favorably in favor of the axial flow type in the large sizes. The problem of turbine design is far less complex in adapting the axial flow type engine because of its small diameter and longitudinal air intake.

Kroger predicted a brilliant future for the gas turbine powered propeller, or "jetprop" engine, pointing out that such an installation weighs only 1/4 that of a conventional engine-propeller combination.

Cold Starting Fuel Developed By Texaco

Development of a new cold starting fuel for aircraft operating in subzero temperatures has been announced by The Texaco Co., which reports it cuts the time required for preparation and starting from as long as six hours to two minutes. The fuel is designed to replace high aviation gasoline but only the interval required to start. Experiments with the fuel have been so

successful that the AAF has asked the company to ship large quantities to Alaska for winterization tests.

Portable Tank Used—In solving the cold starting fuel problem, The Texaco Co. concentrated with leading aircraft engine manufacturers. The fuel is used in regular aviation carburetor and prewar systems. A portable external tank or bottle is attached to regular fuel lines extending off main fuel lines and delivering the special fuel to flow for about two minutes.

After the engine is warmed up, the portable external tank may be disconnected by the ground crew and the engine then draws its fuel from regular gasoline tanks.

The new fuel is liquid at all atmospheric temperatures and can be shipped in regular containers.

Exact Speed Instruments Developed For Navy

Instruments to measure accurately all speeds from the slowest to the fastest have been developed by the Naval Bureau of Aeronautics, it was revealed last week.

Use of helicopters created one problem in speed measurement, as the usual airspeed indicator is ineffective under 45 knots. The result of studies developed a set of light-weight anemometer cups mounted on frictionless bearings and which start rotating in less than two knots of wind, or air stream. In addition, the indicator now measures speed backward, forward, or sideways.

New Method Found—The instru-



Did we ever tell you how Gulf Aviation products are so great?

It happens every time Gulf Aviation Gasoline and Gulf Oil Oil are used — which means constantly!

Long before the new take-off fuel got to the actual flight test, it goes through the Gulf Research Laboratory. When the Gulf lab engineers test and determine how the new product, they can predict its performance with incredible accuracy.

But they've taken it one step further, mechanically, physically and maybe even spiritually!

But, in the air, certain probabilities can crop up in the effect of the engine upon the performance of an oil or gasoline. So here's what happens...

An oil test is made in one engine of one oil company plant!

And not until they do we admit the new product is good enough to replace in performance in the line of Gulf Aviation Products!



DEFINITION:

The Michio Process, the entire refining step that makes Gulf Oil Oil out of ordinary oil, is so simple as this:

We extract from the oil chemically, the impurities the weaker hydrocarbons — which if left in the oil would be burned automatically by your engine in the form of soot and carbon!



Consequently, a far greater percentage of the molecules in Gulf Oil Oil are the tough, friction resistant molecules which resist lubrication.

Try Gulf Oil Oil in your engine and you'll see!

FLUTTER'S DITTY BOX!

After flying at 12 miles a minute, A test pilot sang like a lullaby: "I used Gulf Gasoline And my flying machine Goes faster when an engine is in it!"

*Contributions pleased but

LITTLE KNOWN FACTS DEFE.

Roll out one to each of our first Senior Perch Pilot with the Little Known Fact About "Roll Out the Barrel".

So here are some such facts (don't roll with one) "Fact"

We were a Commission to Justice

Edwards of Longview, Texas, for

"A B-24 with wheels down needs to reach power to pull it through the air so 20-25% engine to maintain the most speed with wheels retracted!"

From Portland, Oregon, Joe Hawkins writes:

"If the P-47's made during the war were just wing tip to wing tip, they would reach the 70 miles!"

And we Commissioned J. E. Green-

wood of Ogden, Utah, for this "Fact"

"The pull on the rear rope of a three-phase glider in straight and level flight measures less than 4 pounds!"



See! All it takes to get a Perch Pilot's membership (don't say) is a tiny bit of information about these facts. And with this you can also get a promotion to Senior Perch Pilot.

Think how you'll impress the gang at the hangar! Mail your "facts" — with proof! — to the address above.

Gulf Oil Corporation and Gulf Refining Corporation...makers of





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OIL SEAL
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Whenever your specifications call for a circular form in Bronze, Copper, Aluminum, Steel and their various alloys you can get them from Butcher & Hart.

They have the "know how" — the experience — the facilities to produce split or solid rings in practically any form or size to rigid tolerances and maintain closely held ground finishes.

The B & H process of cooling rings from basic forms and shapes has proven to be good engineering and metallurgically sound. The finished product has the advantage of circumferential grain which assures greater strength—longer life—better performance in service.

OUR NEW BOOKLET describes and displays the many advantages of the Butcher & Hart method of producing Precision Flange, Snap Rings, Oil Seal Rings and Spacers. Write for a copy today.



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PRECISION LINERS
OIL SEAL RINGS
SNAP RINGS
SPACERS
BUTCHER & HART
MANUFACTURING COMPANY
TOLEDO, OHIO

Scooter-Car On Way

Three James Cartron-Wright Corp. engineers have formed their own manufacturing company in Buffalo and are producing a new type auxiliary vehicle for Toyota Inc., a vehicle which combines the features of a scooter and small car.

It is the brainchild of Stephen Bucholtz, president and general manager of the new company. He formerly was manager of sales manager, who was at Cartron Buffalo plant. Other officers of the firm are W. Kenneth Brockmeyer, secretary and sales manager who was an Cartron factory manager's staff for three years and John C. Perkins, vice-president and chief engineer, who was assistant project engineer for Cartron.

ment to measure high speeds obtained from the work of Dr. Theodore Stenikewsky of the Rockefeller Institute, who was commissioned by Stuker to study measurement of true outside temperature during flight by measuring two instruments "buried" in the air stream, one shielded and the other exposed, he not only could determine the outside temperature, but discovered that the difference in rise of temperature indicated in the two probes is proportionate to the square of the plane's speed.

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PERSONNEL

Col. West Returns to CAL As Senior Vice-President

Col. C. C. West, Jr. (left) has returned to Continental Air Lines after four years of active duty, to assume the position of senior vice-president. Col. West was assistant deputy chief of staff-personnel of the Air Trans-



port Command. Col. Harry C. Short (right) has been named director of planning and research for Continental. Col. Short has been general manager of the Continental-Crews Modification Center operated by the airline.

Ray Johnson, formerly assistant superintendent of maintenance, has been named superintendent of maintenance for Continental Air Lines. Marvin H. Jackson, of Grand Junction, Colo., has been elected chairman of Colorado's new aviation commission. He is the only member of the commission who has served on the former Colorado Aeronautical Board.

Ed Condit, Gordon Mackenzie has been named former port of district traffic manager in New York City for Northwest Airlines.

May D. W. Heald, executive editor of the air periodicals office in San Francisco, has resigned his former position as district traffic manager for Northwest Airlines in Portland. Howard L. Gish, who was Portland representative during Alaskan Airways' operation, has been named assistant district traffic manager there.

Charles A. Chis (photo), recently discharged from the Navy, has assumed the position of district traffic manager for PIA at National Airport, Washington. He will also become his aviation activities as a director of Air Associates, Inc.



W. Krueger Jahn has been named manager of Transcontinental & Western Air, Inc.'s international division at Washington, succeeding Frank S. Busch, who has been transferred to the international division. Dr. John Radcliffe, formerly medical director of

Charles P. Kashi has been named district traffic manager for Delta Air Lines in Cincinnati, replacing General G. Stappan, who was recently promoted to head Delta's new district office office in Chicago. During the war Kashi served in Naval air headquarters at San Jose, Puerto Rico. He was with Delta pre-war.

E. D. Redington, regional administrator for the Civil Aeronautics Administration at Seattle, has returned after three years with the Air Transport Corporation in Alaska and Canada. Paul Morris, who served as administrator during Redington's absence, will be assistant administrator.

John W. Van Allen, vice-president of the New York State Aviation Council, and a former vice-president of the Aero Club of Buffalo, has been named chairman of the Airport Advisory Board of Buffalo. Other board members are Joseph H. Biedewich, Theodore H. Biedewich, Vincent T. Barone and E. Howard H. Rath.

Lombardi Auplane Corp. has promoted three men to department-head positions. Douglas W. Hayward (left) has been advanced to manager of the



sales department, James L. Camp (center) to manager of the sales promotion department, and William T. Wanser (right) to personnel manager.



Capt. Stephen Hartman, Jr., has been named supervisor of training for PIA at National Airport, Washington. He has been serving in the Marine Corps.



Commander Warren B. Pratt has been released of active duty in the Navy's Bureau of Aeronautics and will resume the position of vice president in Washington. He will also become his aviation activities as a director of Air Associates, Inc.

W. Krueger Jahn has been named manager of Transcontinental & Western Air, Inc.'s international division at Washington, succeeding Frank S. Busch, who has been transferred to the international division. Dr. John Radcliffe, formerly medical director of



the international division, also has assumed in the international division, having been succeeded by Dr. LeRoyne White. Recently, Dr. White added Dr. Frank Rosen to the medical staff.

Col. A. H. Stanton named

Brantiff Personnel Head

Col. Arthur M. Stanton (photo), former chief of personnel and base services in the Air Technical Service Command for the south-western area, has been named director of personnel and training of Brantiff Airways. He was stationed at Tinker



Field in Oklahoma and supervised training of B-37 ground crew units. Prior to his military service, Stanton was president of the Gale Car Company.

Capt. Phares McFerrin (photo), formerly eastern division chief pilot for Transcontinental & Western Express Air, has been appointed TWA sales representative of the flying, replacing Capt. Robert N. Back, who has been selected to serve as pilot for a special military mission for the Air Technical Service Command at Wright Field.



Most recently McFerrin was assistant operations manager for TWA, and received TGA in the establishment of standard operating procedures on the pattern set up by TWA and other airlines.

Ronald B. Askew (photo), formerly with Douglas Aircraft, has been appointed expert sales representative for Lockheed, in direct sales activities of Lockheed's worldwide support sales organization. With Douglas, Askew was export sales manager and also served during this war as manager of the company's combat aircraft contract administration.



H. J. Anderson has become affiliated with The Aero Equipment Corp. as sales and service engineer at the Ryan plant. While a pilot in AAF, Anderson was assigned as pilot at Wright Field in the flight section.

D. J. Nelson has joined the sales organization of F. W. Beach, Acly's New York state representative.



PERSONNEL — 31

Airlines Expected to Require Considerable Financing in 1946

Parade to capital markets is by no means over, despite substantial new funds raised by many companies during past years.

The airlines will require considerable additional financing during 1946. Substantial new funds were raised by many of the carriers during the past two years in anticipation of postwar expansion. The parade to the capital markets, however, is by no means over, as the industry has what might develop into an insatiable appetite for new equipment and facilities.

As long as the demand for air transportation continues and boarder's markets appear attractive, expansion programs will be projected and attempted. All this requires considerable sums of money—far in excess of those being provided by current earnings.

Greater Earnings Needed—All new financing simply offsets or substitutes existing equities of the air carriers. Capitalizations are probably becoming broader and new shares are appearing in the salience. Among other things, this simply means that greater earning power must be generated to carry the increased load.

Two air carriers have done this in 1946 financing easily. However, these transactions are really buybacks from 1945. Western raised some \$4,900,000 from the sale of additional stock. The proceeds will be used to finance new equipment acquisitions. Colonial Airlines realized about \$1,350,000 from the sale of 31,600 shares of stock through "rights" to its stockholders. These added funds will pay for new planes to be used for "other corporate purposes." Incidentally, these added shares may help relieve the thinness of the market in Colonial as prior to this financing there were only 224,236 shares listed on the New York and Curb Exchange. Major banks furthermore were actively held.

American Step Accelerated—Major financing may soon be anticipated from American Airlines Inc. This carrier will require substantial new funds for development of its overseas subsidiary, American Air-

lines Overseas, and for the financing of extensive equipment for its domestic routes. American will take delivery this year of converted DC-4s, Constellations, and possibly new DC-6s.

Also by early 1947, it is probable that the first of the 100 new Constellation Visites 240's may be delivered. This commitment alone requires some \$10,000,000. It is probable that American Overseas Airlines may do some public financing directly. This should not be very difficult as this international carrier will have the potent backing of its parent. Furthermore, as the latter only owns about a 31 percent stock interest, it would be relieved of carrying the entire financing burden.

Capital Structure in Order—American placed its capital structure in order about a year ago to take care of any subsequent financing that may be required. It declared a two-for-one split on its common stock, thus broadening the market interest. It called for redemption of its old \$4.35 convertible preferred thus paving the way for the creation of a new preferred issue. A new preferred stock issue of 300,000 shares was authorized but remains unissued.

This, according to indicated unit price of \$166 per share, American can secure about \$50,000,000 from the sale of this new preferred. No doubt, however, has been made known as to the form of financing American will pursue.

United and Wall Old—United Airlines may be expected to avoid any financing for 1946. The carrier has announced that it expects to spend some \$53,000,000 for flying equipment, ground facilities (radio equipment, etc.) over the next 18 months. This program may require well more financing around mid-1947. About two years ago, United sold \$10,000,000 of preferred stock and at the end of 1943 was estimated to hold \$25,000,000 in cash and government bonds.

Plumbers Who Good Record—Eastern, by hoarding the bulk of its earnings, has avoided major financing throughout its present corporate history. This encompasses an eight-year period. This carrier has been fortunate in having one of the best earnings records in the industry, with 1945 representing the first year when a dividend was paid—\$1 per share. At the end of 1945, Eastern was figured to have net working capital of around \$15,000,000. However, the cause is due to take delivery of the new Constellations in mid-1946 and it may resort to some public financing.

TWA Adopts Its Capital Problem—TWA solved its capital problem very neatly by arranging a \$38,000,000 insurance loan to pay for its 38 Constellations. Thus far, TWA has been unable to profitably employ this equipment paid for by a credit drawing interest. This simply perturbed the equity holders of the company.

PAA Action Unlikely—It is unlikely that Pan American will have to resort to the capital markets this year. It has a stock holding of June 1945 in which 2,143,000 shares were sold through the company some \$44,899,930. Further, the existence of a \$44,381 warrants entitling the holder to purchase a like number of common shares at \$18 per share should result in more than \$36,800,000 additional, if all such warrants are exercised. Pan American has declared that arrangements made in mid-1945 will require a minimum of \$10,000,000 to a maximum of \$148,000,000 for new aircraft. The amount actually needed will depend upon future route trends and other variables.

PCA is selling up \$10,000,000 convertible debentures last year will probably manage its capital requirements this year without resorting to new financing.

Northwest—Northwest Airlines will be faced with extensive capital expenditures this year for new equipment and other facilities. It is difficult to see how this carrier can long delay a trip to the capital markets but it course appears uncertain.

In similar predicaments are Northwest, Chicago & Southern, Continental and possibly Delta and Braniff.

Trading Impacts On Market—The actual timing of any of the new issues will be largely determined by the condition of the capital markets. During the current period of market weakness, it is highly unlikely that any airline would attempt to float a new stock issue.

the True AD-ventures of

Edward Hibshman runs Edward E. Hibshman & Associates, the Cleveland advertising agency. One of the Hibshman clients is Mayer Manufacturing Company. Mayer has been making Seven Seas Socks for more than fifty years.

Edward Hibshman knew about True's coming through for others. He decided to try it for Mayer.

So Mayer ran a 1-column, 2-color ad on page 66 of the October True. In the 6-spot body type was a free offer. There wasn't any offer in the headline.

There wasn't any coupon in the ad. If you wanted the free Seven Seas Girl, you had to request it on a penny postcard, or something.



The October issue of True left the advertisements on September 5. On week—seven days—later, Edward Hibshman wrote us an unsolicited letter about results...



Response are still piling in. True makes men act. Better

than 34 million men are buying True at their newsstands each month. They're paying a premium price because they like the only man's magazine of its kind. More than 150 different advertisers are spending

\$615,000 more in True in 1945 than last year—to sell men everything a man uses. True's advertising pages are like the show windows of a big quality shop for men. They are selling so successfully that True is already in America's fastest-growing man's magazine. Use True if you want to sell men.



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World's Largest Publishers of Men's Magazines

True

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3,000 Miles of Runway... When You Fly Floats



Intercoastal Waterways offer new sites for Float Base Operators

Intercoastal waterways along the Atlantic and Gulf coasts of the United States form 3,000 miles of perfect "runways" for float flying. From Boston to Florida or Texas to Mexico, a float plane pilot has a continuous runway below. Navigation is simple and waters are crowded about winter, numerous resorts and landings.

These ideal routes for float planes are ideal sites for new seaplane bases.

Every community or resort along these waterways offers an opportunity for aircraft sales, charters, flight schools and seaplane maintenance. They are on the established marine supply routes of major oil companies, so fuel is easy to obtain. Ramps and docks are quickly, economically constructed. For both pilot and base operator, these waterways mean new pleasure and profit from float flying.



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You have invested in "Air Medals" in years past for the sailing. Here is a book which shows how float planes operate, how to make profits, what figures and legends for flight schools and sales mean. A card or letter to the address below will secure a copy for you.

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SPECIAL AIR SERVICES

CHARTER NON-SCHEDULED INTRASTATE

15 Leading Industrialists Organize New York Area Shuttle Air Service

Data filed at Middle Atlantic route hearing disclose record business figures have extensive operation mapped; no government aid is sought.

Formed by 15 nationally known industrialists of Air Commerce, Inc. to furnish shuttle air service between metropolitan New York airports and 42 other communities in New York, New Jersey and Connecticut is detailed in data filed with the Civil Aeronautics Board at the Middle Atlantic hearing in Philadelphia. No government financial aid is sought.

Regardless of the length of time required by the Board to decide on the tentative aspects of the plan, the company says it will start its interstate service as soon as aircraft and airport facilities are available.

Impressive List of Backers—In a field in which shoe-string operations have been in the majority, the company's list of stockholders and the wealth they represent is appraising Washington aviation authorities.

Members of the board of directors are Edward Bokshoff, a director of Wilson Oil & Gas Co.; Henry P. Brandt, president of Bristol-Myers Co.; S. Bayard Colgate, chairman of the board of Colgate-Palmolive-Peet; Clarence Gaines, founder of Quince Food Co.; Walter Johnson and Alfred N. Wheeler, vice-presidents of Marine Midland Trust Co.; S. S. Larnson, president of Young & Rubicam, Inc.; Col. Frank H. Morgan, treasurer of Penn Corp. of America; and several U. S. Army officers. Lawrence Murray, president of Mellon National Bank of Pittsburgh; Col. Kenneth B. Phagan, of the accounting firm of Phagan, Wilson & Twiss; Russell H. Putt, president of Russell H. Putt Associates, Inc.; and Raymond Rubicam, advertising executives.

Represented by Thack & Lessor—The company was represented at the Philadelphia hearing by Robert Thack, Washington attorney formerly with Pan American Airways, and C. Edward Lessor, formerly chief examiner of the CAB (of

Thack & Lessor, Washington) and Albert Reitel, formerly a CAB examiner and now with the law firm of Kisseloff & Bear, Washington.

Milton N. Weir is president of the company and Edward C. Rowe is secretary-treasurer. Clement D. Gile is vice-president. Offices are at 120 Broadway, New York City.

Program Outline—The program involves a unique shuttle service between metropolitan area airports, a connecting system between New York and 42 adjacent communities and establishment of three seaplane bases in the East River as terminals for passengers traveling "to the heart of Manhattan."

"The corporation's proposed service for commuters is a full-scale program of air communication with unprecedented proposals for providing adequate service to suburban areas," it was stated.

Hourly Service Shined at First—"In its airport-to-airport service, the corporation will operate between the five largest airports. Hourly service will be started first between Washington and Washington, D. C. and New York and New York," it was stated.

Moving Firm Makes First Flight

What may be the National's first business moving company to use the air industry has completed its inaugural air-cargo flight and officials of the firm have every confidence in the success of air transport.

The air mover is the W. J. Diller Co., Pittsburgh. Its cargo for the first flight was government records, however, not furniture. **Used "Narrower"**—L. G. Schaefer, Diller's executive, said the company was using the "narrower" because of the need of special handling of the crates. He said the firm's single-

Queen, Seattle airports will be served later.

Shuttle Service Detailed—An "airport-to-Manhattan" shuttle service will transport passengers from the five airports to seaplane bases at Wall St. and at 23rd St. Present facilities at Wall St. can be utilized and the existing 23rd St. base will be enlarged.

Seaplane communities which will be served include Aubury Park, Englewood, Long Beach, Manhattan, Macartown, Passaic, Paterson, Perth Amboy, Philadelphia, Princeton and New Brunswick, N. J.; Danbury, Fairfield, Greenwich, Norwalk, Stamford, Conn.; Farmingdale, Prospect, Garden City, Glen Cove, Great Neck, Greenvale, Huntington, Long Beach, Massachusetts, Mt. Kisco, Stages Island, Atlantic Beach, Bay Shore, East Hampton, New Rochelle, Oyster Bay, Patchogue, Port Washington, Riverhead, Rockville Centre, Rye, Southampton, Tarrytown, White Plains and Yonkers, N. Y.

Commuter Rates Planned—The airport-to-airport and airport-to-Manhattan service would be conducted day and night. Government Mailway regulations are contemplated, with pilot and engine Special reduced rates for commuters would be offered.

Urgent favorable action by the CAB was John W. Moore, air traffic manager for the New York Port Authority, who said "it is our feeling that the application embodies the next three big steps in air transportation: the development of a substantial air communication network, quick access to airports from city centers, and quick interchanges between airports." The Board says will have to take cognizance of the government and demand for such service at a number of large cities.

crated, Canadian-built Norman tractor, a 1,500-hp.

Schaefer said the company has "many" other air traps already scheduled for the near future. He said rates are being negotiated on those of the Haverhill Grade Cars near Bureau and will average only about 30 percent more than surface freighting transfer to and from airports.

Plans to Use C-47s—For the present, the company is using the "narrower" but plans to convert to use several C-47s within the next few months. It operates 48 trucks in 27 states.

acres. The Board is fortunate in having an applicant financially able to underwrite this service without government subsidy. The Board could be assured that air transportation was being instituted in an area where it has the greatest possible chance of success."

Md. Line Inaugurates Baltimore Service

Beginning an expansion program designed to extend its routes to ten points in Maryland and Delaware, Maryland Airlines, Inc., inaugurated service from Baltimore to Eastern Md. and Rehoboth Beach, Del., Jan. 25.

The airline, which has been operating flights for several months between Washington, Eastern Md., and Rehoboth, had proposed to start service Baltimore in early December but had it held off when the State Aviation Commission refused to license the Boeing monomotor aircraft pending installation of certain facilities.

FOUR Fares Assisted—The more essential facilities and services have since been provided by the Civil Service Civil Co., issues of the field, and a temporary Class B license was granted the airport Jan. 21. The line resumed its Washington-Easton-Rehoboth flights a few days thereafter.

It is using four Cessna planes at present. It has applied to CAB for six routes in the Washington-Baltimore-Washington area.

5,286 Passengers Carried By Idaho Line in 6 Months

Zimmerly Airlines, operating between Pasco and Coeur d'Alene, Idaho, transported 5,286 passengers from July 1, 1945, to January 1, 1946. Flying a daily round-trip scheduled run of 1,000 miles, the company's planes traveled 194,880 miles during the period.

Bert Zimmerly, manager, has an application pending before the Civil Aeronautics Board to establish an eastern service in Idaho, Nevada, Oregon and Washington.

American Joins Objectors in Arizona Feeder Dispute

Call-stop service at Flagstaff, Ariz., by Grand Canyon Scenic Tours when operations began April 15 was objected to by Sky Harbor Air Service, American Airlines, and G & G Airways of Tucson, in a hearing before the Arizona Corporation



New Secretary—Lloyd Child, new executive secretary of the Non-scheduled Flying CAA Advisory Committee, averaged the recent Washington session of the committee (See Page 15) as one of his first tasks after taking office Jan. 4. He formerly was CAA. He was assisted with Curtis-Wright Corp. for 18 years as chief of flight test and in other assignments.

Commission last week

An attorney representing Arizona Airlines questioned whether the commission was within its jurisdictional rights in hearing matters pertaining to aviation. The point was taken under advisement by the commission.

Idaho-California Line

General Aircraft Co., Boise, Idaho, plans to establish an aerial freight line between Boise and the Imperial and Bernardino Valleys in California. Organizers of the firm, John Melles and sons Jack and Frank, have purchased the Boise Flying Service hangar at the municipal airport and are negotiating for purchase of a surplus C-47.

New Freight Service

Formation of Eagle Air Freight Service, with headquarters at Santa Barbara, Calif., is in progress. Founders are Jack and B. Miles, president, formerly of the RAF Eagle Squadron, Richard S. Demsey, vice-president, and Peter Crane, who is to be released to 10th pilot, chief pilot. The new firm is being capitalized at \$50,000 and plans to lease government surplus cargo planes and offer freight service to Los Angeles and San Francisco and other points.

Miami-New York Line Has Radar Equipment

Trans-Caribbean Air Cargo Lines Inc., with radar-equipped converted Army C-47s is offering a non-scheduled Miami-New York passenger and cargo service of seven hours flying time.

With two of eight planes already in passenger service between the two cities, the new airline hopes to have all planes in operation soon, offering non-scheduled service to Havana and Nassau from Miami in addition to the Miami-New York run.

Run by Ex-GIs—Operated by Roy O. Chish, with main offices at 38 West 44th street, New York, the line is manned by ex-GIs, from Capt. Marjory Mack, vice president, down to the flight stewards who double as mechanics.

As soon as the remainder of the planes are converted and ready for operation, cargo service will be extended to Rio de Janeiro, it was indicated by their Miami representative.

Robinson Airlines Opens Ithaca-Buffalo Service

Fifty-five minute air passenger service between Buffalo and Ithaca was begun Jan. 22 by Robinson Airlines, Ithaca. Among the first plane was Bryan James Gentry of Ithaca and Charles Karaman of Cayuga Village, and Secretary Ralph Smith of the Ithaca Chamber of Commerce.

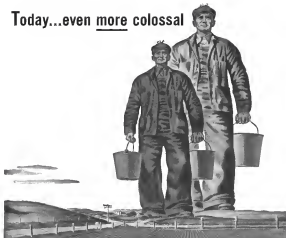
Capt. Thomas J. May has been named general manager. May will be in charge of the development of several proposed additional routes. During the war he was with the engineering division, Air Technical Service Command at Wright Field, and prior to that was in the engineering and development division, Vultee Aircraft Inc.

'Scat System' Commented Operations in Louisiana

The "Scat System," Southern Commercial Air Transport Co., Shreveport, La., began service Jan. 17 by flying a 2,000-lb. shipment of shrimp from New Orleans to Jacksonville, Miss.

Headed by a South Pacific air war veteran, Lt. Col. Paul R. Davis, the line has applications pending before the CAB for a feeder airline network to cover Arkansas, Louisiana, Mississippi and Tennessee (AVIATION NEWS, Nov. 28, 1945).

Today...even more colossal



COLOSSUS of the Cross Roads, the American farmer, toms even larger today than last year!

With his production setting still another new record in 1945, the farmer stepped up his income to an unprecedented 26 billions, and added away nearly 7 billions of it in savings. His accumulated cash and War Bonds now come to 17 billions.

There he stands . . . freder of our people, and food producer for millions of hapless people overseas. There he stands . . . war hero, international soldier of the soil, giant of energy and production. There he stands . . . colossal customer. A man with a list of needs that staggers the imagination, and with plenty of money to satisfy them.

Even in normal times the farmer and his rural

neighbors buy 40% of all American's consumer goods. Sell him through the magnitude that has won his confidence and respect.

Facts of Special Interest to the Radio Industry

Survey shows 40% of personal phones will be sold in residents of rural areas.

In Kansas 425 out of 10,000 farm families owned in key places in 1944 only 25% out of 10,000 city families.

Rural families—even in normal times—purchase and own more 40% of all American products.

Personal incomes have doubled in the last five years!

Country Gentlemen's network was successful during the top 40% farm families.

Country Gentleman
NATIONAL SPOKESMAN FOR AGRICULTURE
A CURTIS PUBLICATION

THIS message is directed to top executives of corporations now submerged in the millions of details of reconversion. If you operate two or more plants you should consider the advantages of corporate-owned aircraft in connection with the rapid solution of the problems of reconversion.

accelerate your reconversion

The war effort was enormously aided by the efficient air transportation system operated in all parts of the world by our Armed Services. Combat theater commanders could consult with their Chief of Staff in Washington and be back at their job anywhere in the world three days (instead of thirty or forty days) later. This high mobility and opportunity for personal consultation unquestionably was a great factor in the close coordination of the war effort and

materially contributed to the freedom from serious errors which marked the performance of our Army and Navy everywhere. . . . Corporations which have widely scattered operations can benefit as greatly by applying the same principles to their operations. Trips which ordinarily require days of the time of key personnel can be cut down to hours. The tempo of reconversion and peacetime production can be correspondingly accelerated.



WE HAVE INQUIRIES ABOUT THE WORLD-WIDE BEECHCRAFT BUSINESS ENGINE RESEARCH AND ITS APPLICATION TO CORPORATION USE. FACTS, FIGURES, AND DEMONSTRATIONS ARE AVAILABLE WITHOUT OBLIGATION.

Beech Aircraft

RESEARCH RESEARCHERS ARE INVITED TO WRITE US REGARDING THE RESEARCH LABORATORY. BOSTON, MASS. U.S.A.

TRANSPORT

U. S., Britain Expected to Ratify Bermuda Agreement in Few Days

American delegates pleased at concessions which break long deadlock over North Atlantic traffic; London expected to be somewhat chagrined.

The United States and Great Britain are expected to ratify the work of Bermuda Civil Aviation Conference within the next few days. At the two national delegations submitted the draft agreements late last week, the Americans were happy about the concessions they had gained. The British, on the other hand, anticipated that while London would accept, the action would not be entirely without some chagrin.

In broad outline, the agreement which would break the existing deadlock over the North Atlantic traffic between the two countries proposes the following substance: At the points in dispute when the Conference agreed two weeks ago.

► **Rate-faring by airline operators** through a conference of the International Air Traffic Association, on the basis of operating costs and subject to periodical review by each government. IATA's first North Atlantic rate conference now is scheduled for New York some time next month.

► **Freight rates will be solicited by regulation and determined**—as they are in the domestic American airline system—by the actual cost of operation.

► **Fifth Freedom service remains virtually unlimited.**

► **Represents U.S. Victory**—Although details of the agreement will not be disclosed fully until the governments have approved them, the draft represents a substantial victory for the United States, which gave way on rates but laid its position against frequency control and limitations on the Fifth Freedom.

Two factors which may largely be responsible for the British concessions on frequency and destinations are the imminent Congressional debate on the \$3,750,000,000 American loan to Britain and the fact that the Labor Government, while still intent on nationalizing British airlines, is more inclined

PICAO Meeting Set

The Assembly of the Provisional International Civil Aviation Organization will meet in Mexico City May 31, probably for three weeks. It was decided at last week's meeting of the Interim Council.

The Council began preliminary sessions of the Assembly agenda, among them: ► **Members left unsettled by the "Change conference"** is a bilateral agreement on commercial rights in air transport, and rule regulation. ► **Selection of the seat of the permanent organization.**

Meetings of the new PICAO depend on facilities of international air transport have begun. The conference will seek ways to cut and ease involved in international travel.

Pen American Airways and American Overseas Airlines

While British operators still disagree over the advisability of operating Lockheed or waiting for later and more advanced American types, they have managed to convince the politicians at the higher levels that purchase of American aircraft is a necessity. In this, they have had the support of officials at the "working" level of the government—the same level from which the delegates to Bermuda have been drawn.

► **Round Shakeup**—Further British government skepticism toward the operators' point of view is also seen in the Ministry's refusal of new blood into the BOAC board of directors. The last drops Sir Gen. A. C. Critchley as director general and replaces him and two other



In Bermuda Discussions: Particularly active in discussion of bases at the Anglo-American Conference on Civil Aviation, at Bermuda, were these military and naval advisors to the U.S. delegation. Left to right they are, Vice Admiral Forrest P. Sherman, John W. Kennedy, assistant secretary of the Navy, Maj Gen Laurence S. Kuter, and Col Samuel Goss.

Tory members with five new faces. They include Maj. J. B. McGinnis, deputy director general and a Bermuda delegate, Lord Burghley, former governor of Bermuda, and Sir Harold Hartley, the leading organizer of the Railway Air Services which were, under former plans, to run British internal and European lines at a chosen instrument.

'Transcon' Project Termination Near

Airlines expect step to be announced soon, GDT Order 56 expects Feb. 15.

With partial discontinuance of the "transcon" project announced on the basis of last week's revocation of order GDT 56, the airlines are looking forward to a time in the near future when they will have 100 percent of their own and spare available for commercial operation.

The GDT order under which since Dec. 3, 70 percent of available space from Pacific Coast terminals was committed for servicemen expires at noon Feb. 15. GDT explained that troop movements had passed the peak, and that new troop shipments were becoming available for troop transportation. About 20,000 servicemen a month were carried under the order.

'Transcon' Rehearsal Expended—Meanwhile the airlines were expecting at any moment announcement that the "transcon" project, whereby transcontinental airlines covered foreign cross-country under army contract apart from their regular commercial operation, would stop under as TWA and United are concerned, leaving Northwest and American to continue for a short time Air Transport Command which also has been participating in the project, is expected to continue for an indefinite period.

Although happen were that the "transcon" project ended, GDT he would mean the movement of about 100,000 servicemen a month, the figure has been running around 50,000, and never did attain the full objective.

Cargo Meeting Postponed

Airline cargo traffic now met at the Chase Hotel at St. Louis Feb. 13-14 to work a uniform bill of lading for use by all air freight operators to facilitate interchange of through shipments whatever the individual tariffs. The meeting was postponed from Feb. 3-4.



FIRST COMMERCIAL SKYMASTER

To Western Air Lines, which 22 years ago took delivery of Douglas Aircraft Co.'s first airline plane, the M-3 biplane, went the first post-war commercial version of the C-44 to come off the Douglas production line at Santa Monica, Calif. The company expects to put the M-3 in use soon after the Denver-Los Angeles route over which it made a survey flight a few days ago. Flight time to Denver from the West Coast, was approximately five hours. The plane is shown here against a backdrop of California mountains as it appeared on a Los Angeles-San Francisco survey flight last week.

Bermuda Tourist Trade Hinges on Air Travel

BERMUDA (Special) Anglo-American agreement on commercial use of air bases will be hailed nowhere as enthusiastically as it will be in Bermuda, whose return to normalcy as a resort island is almost nine months ahead of the ability of the membership lives to serve it. If its 1946 season is to be a success, Bermuda needs air transport.

Both British and American delegates to the Anglo-American civil aviation conference here feel that the agreements on bases will be as important to other Caribbean islands, such as Trinidad, Antigua, St. Lucia and Jamaica, and former a sizable new tourist traffic by air in that area.

Booked to Capacity—At Bermuda, Pan American Airways and British Overseas Airways, each with only two services a week, are presently the island's only scheduled transport link to the main source of tourist trade in the United States. Both lines are booked to capacity on most flights.

Before the war, the large cruise steamers of Furness, Withy and other lines did the job. But these were taken over for troop transport

and will not be ready to return to the tourist service until next November.

Must Depend on Airlines—In the meantime, Bermuda must depend on the airlines for its life blood. Severely handicapped by lack of equipment, BDA cannot promise any immediate help, so that the island's hopes are centered on Pan American.

It is not yet known how often the latter will be allowed to fly into Kindley Field, the U. S. Army Air Force base and the only landing field on Bermuda. Nevertheless, the natives, reading of the Constellation's 3 by 30 min. round trip here from New York already are encouraging a shuttle service twice a day.

DC-4's Used Now—Admitted to Kindley twice a week since the first of January under a temporary arrangement, Pan American has converted from the old Boeing Clippers to DC-4's. Whether or not it will replace their ships by the faster Constellation depends to a large extent on the number of frequencies it will be allowed at Kindley.

Company officials point out that the Constellation is too expensive to operate on short hauls unless its speed can be turned into an economic asset by frequent trips.



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ATA Navigation-Traffic Study Promises to Be Comprehensive Effort

Outline of objectives and functions of new group shows plan is to proceed independently rather than to rely on government agencies to foster development of new methods and equipment.

By MERLIN MCKEE

Outline of objectives and functions of the new Air Navigation-Traffic Control organization recently set up by Air Transport Association promises a comprehensive effort to solve problems that are bothering airplane operators even with increasing frequency.

Need for improvement in air traffic control methods and equipment long has been recognized, and considerable progress has been made through cooperation of ATA and Civil Aeronautics Administration. But the long-range problem still is unsettled and the Association operations committee has concluded that, rather than rely on government agencies, the best way to solve them is for the airlines to foster development of new methods and equipment.

Objectives Listed—As outlined to the Board, these will be the aims of

the new ATNC group:

- 1 To provide a means for joint airline study and development of air navigation and operational systems.
- 2 To provide an agency in the Airframe Research Laboratories Inc. to test ground-to-ground, ground-to-air and air-to-air systems.
- 3 To develop and design airborne electronic and navigational equipment that will provide more efficient operating characteristics and which will also consideration of functions thereby required that does the number of airborne units required.
- 4 To coordinate liaison with Government and service agencies and work with the problem of air weather operations and to conduct joint studies and development projects which joint enterprise appear advisable.
- 5 To test and evaluate the adaptability of recently developed electronic equip-

ment to existing aids or systems of aids that will be available for use in the air navigation and traffic control systems.

To do this, they will:

- 1 Review present aids and practices for air navigation and traffic control.
- 2 Investigate air navigation aids, procedures and systems.
- 3 Develop air navigation and specialty related control requirements to satisfy loads the rapidly increasing air traffic.
- 4 Develop and design development of special equipment through Aeronautical Radio, Inc. and manufacturers.
- 5 Evaluate and evaluate existing air navigation and traffic control systems.
- 6 Develop and design a satisfactory air navigation and traffic control system and maintain it.

To attain these objectives, ATA's board has voted approximately \$200,000, a considerable amount above the original six months' budget estimate due to the fact that a C-54 will be used in the experimental work, rather than a C-47 as was intended at first. No difficulty is expected in obtaining allocation of the plane from Surplus Property Administration.

Meeting Scheduled—Although only the preliminary work has been done so far, the expectation is that a meeting of operational representatives of the airlines will be called in about three weeks, at which selection of personnel and a program will be outlined.

Under the organizational chart, the ATNC control committee will include five members of ATA's operations committee. The control group will be responsible to the Board, and its policies will be determined by Milton W. Arnold, ATA vice-president in charge of operations and engineering, through an ATNC director.

Advisory Council To Assist—An Advisory Council will consist of the Radio Technical Commission for Aeronautics (RTCA), the Air Line Pilots Association, Civil Aeronautics Administration and Civil Aeronautics Board, Army, Navy and Federal Communications Commission. ATA is recommending to RTCA's executive committee that it create a special committee for the purpose. The suggestion is made that Aeronautical Radio, Inc., acquire the Airborne Instruments Laboratory, whose functions under ATNC would include development of equipment, preparation of technical equipment specifications to guide manufacturers, and other functions directed by Aeronautical Radio.

Old Army, Navy Work—The Airborne Instruments Laboratory at New York, a group of trained technical workers who worked for the Army and Navy during the war, was



Picture of a full-power take off

This photograph was taken through a special viewing glass of one of Standard of California's test aircraft engines just after it was set to simulate a full-power takeoff, and what is happening will tell our readers plenty about the aviation gasoline they're testing.

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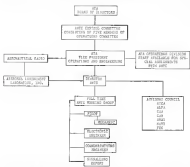
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ATNC Set-Up: Chart shows proposed arrangement of ATA's Air Navigation-Traffic Control organization, making for which was provided by the Association's board of directors at their recent meeting.

acquired by American Airlines with the understanding that eventually it would be turned over to the industry. ATA expects to pay Aero-nautical Radio about \$10,000 for ATC work.

The ANTC budget includes in addition to funds for AIL, acquisition of the C-34 and its operation and contingencies includes money for a director, a working group including pilot, electronic engineer, communications engineer, signaling engineer, airplane mechanic and other items.

Headquarters will be in the ATA office in Washington.

TWA Starts Training Air France Crewmen

Spadmen believed to be the first foreign civilians to be schooled here since war's end.

Thirty air crewmen of Air France, French national airline, started training last week in TWA's International Division school at Reading, Pa. Municipal Airport. They are receiving instruction in a 51-passenger Constellation, a Skymaster and a DC-3, the last converted to a navigational trainer with four separate stations within the ship.

Headling the French delegation is Capt. Richard Carlet, chief pilot for Air France. His group is believed to be the first of foreign civilians flown trained in the U.S. since the war ended. The school expects to instruct more than 100 French, and later may take in air crewmen of other countries.

Maintenance Phase as Way—In addition to the three ships now in service, L. P. Week, superintendent of operations training, said another DC-3 is being modified at the Glenn L. Martin plant in Baltimore, and others may come along subsequently.

TWA expects to train 130 of its own flyers in one year. Besides pilots, first officers, navigators, radio and stewards or hostesses. Twenty-five hostesses and a like number of stewards for the international division will receive flying time at Reading beginning Feb. 7. They did their ground studies at Kansas City.

Work Will Continue—Courses for new personnel will extend from six to eight weeks. Every six months, flying personnel will be brought to Reading for recertification.

While TWA set up the school early this month (Aeronews, Jan. 7), the airline entered a lease with



Key Figures at TWA School. Three important figures of TWA's new International Division School at Reading, Pa., are represented by these men. Left to right they are: L. P. Week, superintendent of operational training at the school; Melvin H. Nunn, secretary of the Reading Airport Commission, which is negotiating for transfer to the city of government property in which the school is conducted; and Capt. Richard Carlet, chief pilot of Air France, which has 40 crewmen in training at the institution.

the Third Service Command because claims are being conducted as government-owned buildings. Later, however, Reading Army Air Field, which includes most of the international airport, was declared surplus.

Transfer Under Way—Reading officials expect to complete transfer of government property to the city soon, says Melvin H. Nunn, secretary of the Reading Airport Commission. The government erected 107 buildings on the 435-acre tract and includes old runways and taxiway open, each more than a mile long. The government property includes four all-steel hangars large enough to accommodate several multi-engine aircraft each and a control tower, barracks, a hospital, theater, staff buildings, and others. TWA is using a large wooden maintenance hangar, which can house four C-54s.

The school is a successor to one conducted by TWA for the Air Transport Command at Washington National Airport.

Molson Line Gets C-54s

In Latest SPA Allocation

Latest Surplus Property Administration allocation awarded a Douglas C-54s to Molson Navigation Co., ownership applicant for a CAD-certificated air route between Houston and the West Coast. Molson told SPA it intended to

use the ship not for public transportation but in connection with its own operation in the Mexican Islands and South Pacific, to keep in touch with its outposts. The line expects to fly the plane about 100 hrs a month.

Other Allocations Listed—Other C-54s were allocated as follows: American Airlines, eleven; Industrial Air Transport, two; Lufthansa, four; Norway, three; Delta Air Lines, two; KLM, two; Imperial and Export, Mexico, two. DC-3 types went to Eastern Air Lines, two; Delta Air Lines, one; BAHAMA, four; and Transcontinental Overseas Airways, two.

Georgia Supreme Court Upholds EAL Gas Ruling

Georgia's supreme court recently upheld a superior court judgment setting aside a suit by the State Revenue Department to collect \$252,312 in gasoline taxes from Eastern Air Lines. Eastern contended the fuel was used only for pleasure, exempted in interstate commerce, after it had been purchased outside Georgia, shipped into the state by common carrier, and stored at Atlanta Municipal airport. The supreme court held that the Georgia code does not exempt the fuel as storage and withdrawal from the state of fuel purchased outside the state.

PILOT PAY DISPUTE

Approval of Airline Committee Predicted

Companies reported advised not to appeal case to public through newspapers.

By DELANE STURRFIELD

The Airlines Negotiating Committee and the Air Line Pilots Association both tried last week to plug leaks in information on their controversy over the pilots' demand for a 10 percent pay increase on fuel-augment equipment as it was reported unofficially that the airlines had been advised by high authority not to appeal the case to the public through newspapers.

They have been advised on that score previously by CAB members. **CAB OK of Committee Stems**—One CAB official, who declined to be quoted, said that it has again the Board will approve the same settlement by which the airlines' committee was withdrawn. It is the generally accepted opinion that silence on the part of the Board could constitute approval.

Since the Anti-Trust Division of the Justice Department indicated at a CAB conference on the airline agreement that it had no objections, CAB action is regarded as largely academic.

Mediation Board Fails—A representative of the National Railway Mediation Board said at the conference that NMB deals with concerned employers acting singly in the railway industry, and he saw no reason why not. He made no commitment concerning the airlines committee. Spokesman for NMB was posted out, however, that employer group negotiation has been by consent of both parties in dispute.

Official opinion that the airlines committee can control negotiated agreements with individual airlines (Aeronews, Jan. 25), is confirmed by official sources in Washington and by some airline operators.

Strike Plot Unsubstantiated—It could not be learned whether a report that pilots were taking a preliminary strike will have any basis in fact. ALPA denies any arrangements of the Railway Labor Act, weekly periods would add up to at least 60 days—before any strike could take effect. Most influential sources do not anticipate a strike.



STATION FLOWN BY DELTA

In preparation for reopening of its station at Tyler, Tex., Delta Air Lines recently flew the necessary station equipment from Dallas. Tyler is a C-54 which was at its unit in the Douglas plant at Santa Ana. The \$400,000 lot included a 100-lb. safe, passenger loading ramp, two DC-2 cargo nose loaders, radio transmitters and receivers, batteries and battery carts, crates of tickets, flight forms and administrative papers, and other items.

Senate Group Defers Decision On Young

A Senate Commerce subcommittee last week to consider the nomination of Clarence M. Young of San Francisco member of the Civil Aeronautics Board but deferred action pending comment on Young's selection from Sen. William F. Knowland (R., Calif.).

Continuing procedure it to seek the opinions of senators from the nominee's home state. Senator Sherman Denney (D., Calif.), submitted a favorable opinion, in knowledge that AA would likely apply for.

Members of the subcommittee—Senators Mead of New York and Magnuson of Washington, Democratic, and Wiley of Wisconsin, Republican.

WAL Stock Does Well

Western Air Lines' recent offer to its shareholders of an additional 102,480 shares of capital stock, to provide a new \$1,810,360 in working funds, was within 1,725 shares of being fully subscribed at the close of the 10-day subscription period. Of the total \$1,807,469 was subscribed by Western's officers and directors.

Continuance of MCA As Independent Urged

Benefit tells CAB merger heading his line will be increased in acquiring it.

Retention of Mid-Century Airlines' status as an independent carrier, or its absorption by another regional carrier, was advocated by airline most actively opposed to the proposed MCA-American Airlines merger as the CAB hearing on the matter closed.

T. B. Benefit, Benefit Airways president, told CAB customers his line still is interested in acquiring Mid-Century, and contended that the Board must consider "other and more desirable" possibilities than the AA-MCA merger. Benefit, he said, probably had arrived at an agreement with Ryan. Ryan, former president of MCA, when Ryan was called into service in 1962.

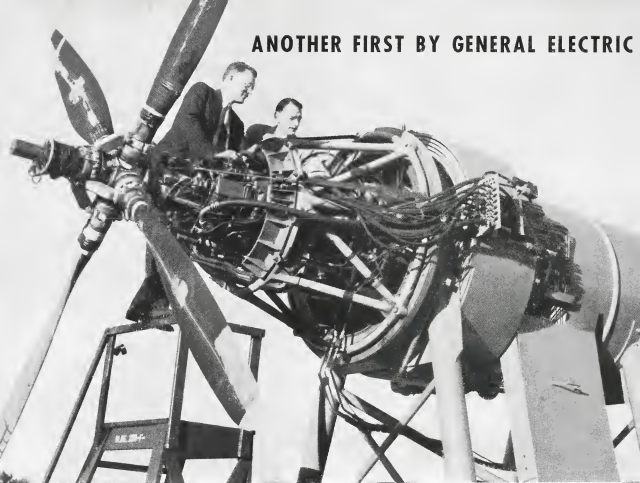
Says Talks Could Resound—In view of recent conversations with Col. Ryan since his return from overseas, Benefit said, it appears that there would be no difficulty in negotiating discussions on a MCA-BSP merger should the Board disapprove the consolidation with American.

He argued that the proposed merger with American would be adverse to the public interest, and it would "seriously jeopardize" Benefit by affecting additional competitive services with its already "strongest competitor." In addition, it would place American in a dominant position as the main north-south carrier in the mid-continental region, further increase the size of American, the nation's largest air carrier, and should make mandatory Board approval of route consolidations and one-stop privileges that AA would likely apply for.

Wilson Testifies—TWA's Board chairman, T. B. Wilson, expressed the belief that "Mid-Century is giving up too quickly" and that MCA could become a significant as an independent operator. Wilson also stressed the loss of inter-city business and said that approval of the merger would find CAB dealing, in the next five years, with numerous cross-line applications.

United Air Lines' traffic vice-president, Harold Cray, expressing belief that MCA could survive as an independent carrier and that while MCA now is making money,

ANOTHER FIRST BY GENERAL ELECTRIC



Push and Pull Engine

This new engine represents another departure from convention—it's a G-E aircraft gas turbine designed for propeller drive. Engineers have long known that such engines should be most effective on long-range, high-speed ships, and early last summer one was installed in an experimental Army plane. Tests to date indicate that the enormous power developed by this type of engine will mean the opening of a new era in aircraft design and faster world travel.

Called the TG-100, this engine utilizes most of its power to drive the propeller—the rapidly spinning turbine driving through specially designed reduction gears. Additional thrust is obtained by jet propulsion from exhaust gases. Airmen will like the TG-100—its light weight, simplicity, virtually no vibration, continuous high power, and fuel economy on long-range, high-speed ships. Here, G-E engineers have combined the best features of each type of propulsion—cancelling out the limitations of each to obtain an engine of superior design and power. General Electric is continuing research in this field, and our engineers will be glad to answer your questions about this and any other equipment we have developed for the Aviation Industry. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



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